REMARKS

Applicant wishes to thank the Examiner for reviewing the present application.

Claim Amendments

Claim 1 has been amended to specify that the microprocessor is configured to decode only two instructions, namely the MOVE and LOAD instructions and further detail regarding the nature of these instructions has been inserted. In view of this amendment, claim 15, which previously stipulated only two instructions has been cancelled. Claim 1 has also been amended to clarify that the state machine consists only of the four previously listed states. These amendments have been made to emphasize the massively reduced instruction set that enables a smaller and less complex processor to be used whilst still providing the functionality necessary to process communication packets. As discussed on page 2, lines 16-21 of the present application, the apparatus, when arranged in the way recited in amended claim 1, provides low, predictable latencies particularly suitable for processing IP packets while using only the circuitry and instruction sets needed to accomplish this.

Claims 3 and 9 have been amended to expand the acronyms identified by the Examiner.

Claims 10 and 11 have been amended to correct typographical errors identified by the Examiner.

Claim 16 has been amended to change its dependency to claim 1.

Claim 20 has been cancelled.

No new subject matter is believed to have been added by way of these amendments.

Claim Rejections – 35 U.S.C. 102

Claims 1-7, 9 and 20 have been rejected under 35 U.S.C. 102(b) as being anticipated by Boucher (US 6,434,620). Applicant respectfully traverses the rejections as follows.

Firstly, as noted above, claim 1 has been amended to specify that the processor is configured to process only MOVE and LOAD instructions, similar to what was recited in claim 15. As acknowledged by the Examiner, Boucher does not teach decoding only two instructions, namely MOVE and LOAD. As such, the rejections under 35 U.S.C. 102(b) are rendered moot. However, Applicant notes that although Boucher may suggest the four states recited in claim 1

in some form or another, there is no explicit teaching of having only those four states. This is clearly recited in amended claim 1, thus further distinguishing over Boucher.

As amended claim 1 is now similar to previous claim 15, Applicant will address the combination of Boucher and Warnes (US 7,051,189) as applied in the office action with respect to claim 1, as amended.

The present application relates to a processor for providing low, predictable latencies in processing IP packets, which is particularly suitable for embedded devices (see page 2). The processor is specialized circuitry that, e.g. processes IP packets for video communications and control of the video source, without an operating system. The processor is configured to process instruction words of a fixed length and to decode only two instruction sets, namely MOVE and LOAD instructions. The apparatus having the processor also has a state machine that controls operation of the processor. The state machine has only four states, namely, a RESET state, a FETCH state, a WAIT state and a JUMP state. It is this configuration that enables communication packets, in particular IP packets to be processed whilst utilizing the minimum amount of circuitry. It has therefore been recognized by Applicant that a more efficient and smaller circuit can be used to process data communication packets, in particular for processing video. Claim 1, as amended recites this configuration.

The Boucher reference teaches a network interface card that works with a host computer. The device provides a fast-path that avoids protocol processing for most messages, which accelerates data transfer and off-loads time-intensive processing tasks from the host CPU. The device contains specialized hardware circuits that are intended to be much faster at performing their specific tasks than a general purpose CPU.

Although Boucher mentions or refers to the states and the use of certain instructions for a processor, Boucher does not provide a apparatus that processes only two instructions (MOVE and LOAD) and has only four states.

The provision of having only MOVE and LOAD instructions has been rejected as being obvious regarding Boucher in view of Warnes. The Examiner appears to rely on the mere listing of "MOVE" and "LOAD" instructions in a claim found in Warnes. However, there is no teaching in Warnes of limiting the processor to only MOVE and LOAD operations and in fact claim 35 in Warnes also mentions STORE and COMPARE instructions. Clearly, Warnes has not contemplated how to provide the handling of data communication packets with a minimum of circuitry as recognized by Applicant. There is simply nothing that would suggest that either Boucher or Warnes has recognized this problem and found a solution that reads on or renders

6

obvious what is recited in claim 1. As such, it is believed that claim 1, as amended (and former claim 15), clearly and patentably distinguish over Boucher in view of Warnes.

Claim Rejections – 35 U.S.C. 103

Claim 8 has been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Westermeier (US 2003/0048775). Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Westermeier must not only teach what is recited in claim 8 but also what is missing from Boucher. Applicant respectfully submits that Westermeier does not teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claim 8 is also believed to be distinguished over Boucher in view of Westermeier.

Claims 10 and 11 have been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Dupree (US 5,655,133). Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Dupree must not only teach what is recited in claims 10 and 11, but also what is missing from Boucher. Applicant respectfully submits that Dupree does not teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claims 10 and 11 are also believed to be distinguished over Boucher in view of Dupree.

Claim 12 has been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Beverly (US 7,020,836). Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Beverly must not only teach what is recited in claim 12 but also what is missing from Boucher. Applicant respectfully submits that Beverly does not teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claim 12 is also believed to be distinguished over Boucher in view of Beverly.

Claim 13 has been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Boyle (US 6,092,229). Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Boyle must not only teach what is recited in claim 13 but also what is missing from Boucher. Applicant respectfully submits that Boyle does not teach an apparatus

that includes only two instructions and four states as recited in claim 1 and thus claim 13 is also believed to be distinguished over Boucher in view of Boyle.

Claim 14 has been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Gates (US 6,449,709) in further view of Warnes. Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Gates and/or Warnes must not only teach what is recited in claim 14 but also what is missing from Boucher. Applicant respectfully submits that neither Gates nor Warnes teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claim 14 is also believed to be distinguished over Boucher in view of Gates in further view of Warnes.

Claims 15-17 have been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Warnes. Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Warnes must not only teach what is recited in claims 15-17 but also what is missing from Boucher. Applicant respectfully submits that Warnes does not teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claims 15-17 are also believed to be distinguished over Boucher in view of Warnes. Regarding claim 15, the arguments presented above with respect to amended claim 1 equally apply to this rejection.

Claims 18-19 have been rejected under 35 U.S.C. 103(a) as being obvious regarding Boucher in view of Warnes, in further view of Westermeier. Applicant respectfully traverses the rejections as follows.

It is believed to have been shown above that claim 1, as amended, distinguishes over Boucher. Therefore, Warnes and/or Westermeier must not only teach what is recited in claims 18-19 but also what is missing from Boucher. Applicant respectfully submits that neither Warnes nor Westermeier (alone or in combination) teach an apparatus that includes only two instructions and four states as recited in claim 1 and thus claims 18-19 are also believed to be distinguished over Boucher in view of Warnes and Westermeier.
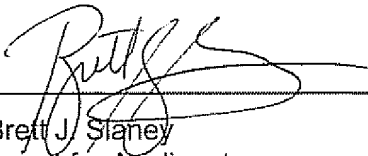
Summary

In view of the foregoing, Applicant believes that all pending claims, namely claims 1-14

and 16-19 are clearly and patentably distinguished over the references cited by the Examiner and are in condition for allowance.

Applicant requests early reconsideration and allowance of the present application.

Respectfully submitted,

Brett J. Slaney
Agent for Applicant
Registration No. 58,772

Date: November 15, 2007

BLAKE, CASSELS & GRAYDON LLP
Suite 2800, P.O. Box 25
199 Bay Street, Commerce Court West
Toronto, Ontario M5L 1A9
CANADA

Tel: 416-863-2518
BS/